porter**wright**

FOOD & AGRICULTURE QUARTERLY

MARCH 2018

CONTENTS

editor's note

- JAY LEVINE

I am delighted to bring to you the second edition of FAQ – Porter Wright's *Food & Agriculture Quarterly*. This edition contains three very diverse articles that are informative and thought-provoking.

First, Emily Lane explains how agriculture is becoming ever more affected by "Big Data" and the Internet of Things (IoT). Interestingly, I recently attended the National Council of Farmer Cooperatives' Annual Meeting, and one of the speakers discussed how the newer generation of farmers are seeking to make the most of their data and analytics. At breakfast, I discussed with California agriculture executives how their growing operations are changing due to IoT and drone technology, and they shared how they foresaw even more changes to come.

Next, we have the first in a two-part series by Will Sjoberg, one of our newest partners here at Porter Wright. He gives us a glimpse of what agriculture might look like without NAFTA, and why we should care. Finally, Devan Flahive discusses consolidation in grain markets and how antitrust enforcement may react to pending mergers.

I am sure you will enjoy each article. As always, if there are topics of interest, please contact me and we will do our best to address them in upcoming editions.

Jay Levine
Editor

> *"We have neglected the truth that a good farmer is a craftsman of the highest order, a kind of artist."*
>
> *— Wendell Berry*

Big Data and the Internet of Things

EMILY LANE

The Internet of Things (IoT) is simply "the networking capability that allows information to be sent to and received from objects and devices (such as fixtures and kitchen appliances) using the internet." *Merriam Webster Dictionary*. Big Data is a large part of the IoT, and the intersection of the two promises vast advancements in benefits to be gained from analytic data. Smart Agriculture is perhaps one of the most important industries that stands to benefit from these advancements, and it is growing "big" on its own: the market is expected to grow from $11.30 billion in 2016 to $30.01 billion by 2025. Developments in software and hardware that are able to take agricultural data and transfer it to something that can practically be applied in the industry offer hope to tackling the many challenges that are unique to the industry.

For example, according to the World Bank, the world will need to feed an estimated 9.7 billion people by 2050, which translates to a 50 percent increase in

food production. If we are going to bridge what now seems like an insurmountable gap between projected demand and expected supply, the agricultural industry is going to have to increase its efficiency and output. This will be no small feat, as many of the crops currently grown are facing obstacles to continued growth, either by environmental threats that create inhospitable farming environments as a result of climate change, or by forming immunities to many current pesticide regimes that are meant to protect the crops from disease and weeds.

Luckily, there are at least four major areas in which the IoT promises to help the agricultural industry tackle these unique hurdles. The first three areas focus on production-side data collection and analysis. First, analytic data can be harnessed for use in Precision Agriculture. Second, IoT and Big Data can be used in livestock and fishery management to monitor the health of a variety of livestock, and be proactive in health and disease management. Third, agricultural equipment can be monitored and tracked for systems of irrigation, tractor routes, and for collection of data from autonomous agri-vehicles, precision planting, crop spraying and harvesting. This data collection can also be helpful for fault management and proactive maintenance.

These technologies collect data by remotely observing, measuring, and monitoring crops and environmental conditions in real time, and saving that data for later comparison to assess how the next growing season compares to the last. One example is a technology product that combines data derived from soil humidity and weather data sensors placed in the field, which in turn uses predictive analysis for when the farmer

needs to irrigate, in which part of the field and for how long.

Other technologies focus on monitoring pests, using a system of censored traps and photography to count, in real time, the number of pests in given parts of the field. Some utilize a combination of various photography methods (including drone photography) to estimate yield production via image analysis.

The fourth major area in which the IoT and Big Data promise to help the agricultural industry tackle its unique hurdles is through the collection and analysis of supply chain and logistics data. The IoT is especially important in this context, as it allows all of the major stakeholders in the agricultural industry to not only collect data, but *share* and *use* that data across different parts of the industry. The major stakeholders represent the steps it takes for food to get from the farm to the consumer: the farmer, the shipping and travel logistics teams, the distribution centers and finally the retailers. When supply and demand data, for example, can be gathered by the retailers and distributors, and then shared with the farmers and logistics teams, food waste can be avoided by appropriately harvesting and sending product where it is most likely to be sold to consumers.

All this said, there are significant challenges to fully realizing the benefits the IoT and Big Data promise for the agricultural industry. For one, sharing of data and the results of predictive analytics can raise significant antitrust concerns. Additionally, as with all data technologies, there are definite confidentiality concerns, both as to ownership and control of the collected data and analysis. There are also financial complexities,

as a significant portion of the agricultural production sector is made up of small farming operations who cannot always afford the benefits of the available technology, which injures not only the farmer, but also the IoT by reducing the amount of data available to amass and analyze for global agricultural trends.

Nevertheless, Smart Agriculture's expected growth in the next decade and the ever-changing nature of the globe's population and environmental conditions certainly create a business environment in which the agricultural industry will be able to overcome these challenges, and fully capture the benefits that the IoT and Big Data promise in the coming years.

Emily Lane is an associate and focuses her practice on environmental litigation. She can be reached at 614.227.1985 or elane@porterwright.com.

The future without NAFTA?

WILL SJOBERG

The North American Free Trade Agreement (NAFTA) is over 20 years old. Whether it should be changed is open to debate. What is not open to debate is that NAFTA will change, either through revision or termination. While the different permutations and combinations of what a revised NAFTA may or may not include are infinite, the same cannot be said of a terminated NAFTA.

In 1994, the first year of NAFTA, the U.S. experienced a $177 billion overall trade deficit. Notwithstanding that deficit, the U.S. also experienced a $10.6 billion agricultural trade surplus. That U.S. agricultural surplus was somewhat offset by a $68.7 million U.S. agricultural trade deficit with Canada and Mexico. In other words, in 1994, U.S. agricultural trade was 4.7 percent of U.S. trade and, of that amount, 25.8 percent consisted of U.S. agricultural trade with Canada and Mexico.

Contrast the foregoing statistics with those from 2016 and, other than magnitudes, little

has changed. In 2016, the U.S. experienced a $797.7 billion overall trade deficit. However, in that same year, the U.S. also experienced a $16.8 billion agricultural trade surplus. Again, that U.S. surplus was offset by a $5.2 billion agricultural trade deficit with the U.S.' two NAFTA partners. The ratio of U.S. agricultural trade to total U.S. trade remained stable at 4.8 percent. However, the percentage of U.S. agricultural trade originating from or destined to Canada and Mexico increased to 31.1 percent (or by 5 percentage points) of total U.S. agricultural trade.

NAFTA's primary objective was and still is to eliminate barriers to trade in, and facilitate cross-border movement of, goods and services between the U.S., Canada and Mexico. While there are eight provisions in NAFTA that address agriculture, the most important provision to U.S. farmers is elimination of tariffs and the market access granted to their agricultural exports to Canada and Mexico. In the first 23 years under

NAFTA, combined U.S. agricultural exports to Canada and Mexico increased by 243 percent.

What would happen if the current negotiations fail and the U.S. is no longer a member of NAFTA? First of all, tariff preferences for all goods would be eliminated and tariffs between the three countries would increase from zero or low tariffs to Most Favored Nation (MFN) tariff levels. MFN tariff rates are not necessarily the highest tariff rates; nonetheless, all members of the World Trade Organization must apply them on a non-discriminatory basis. If the tariff line is "bound," the level cannot exceed the bound level without facing a dispute settlement action and possible retaliatory tariffs to compensate the affected countries. Second, and related to the first, U.S. agricultural exports would likely occupy a relatively smaller portion of the Canadian and Mexican markets. Higher-cost U.S. exports may cause consumers in those countries to seek alternatives. Third, and related to the first two market reactions to NAFTA being terminated, U.S. agricultural imports from Canada and Mexico would be more costly. Those higher-priced imports would not only affect the U.S. consumer, but also some U.S. processors that use agricultural inputs to produce a semi-finished or finished product, e.g., tomato paste. Fourth, terminating NAFTA would disrupt supply chains. In NAFTA's 20-plus years, agricultural supply chains between the U.S., Canada and Mexico were established; terminating NAFTA would terminate or disrupt many such chains as customers seek lower-cost goods. Last, should the U.S. withdraw from NAFTA, its negotiating leverage would likely be diminished. For example, without having a "seat at the table," the U.S. would likely find it more difficult to influence its neighbors' agricultural

policies, labor laws and environmental laws, among others.

From the foregoing, it appears a U.S. withdrawal from NAFTA would have lasting negative effects on U.S. consumers, U.S. processors and U.S. farmers, generally. But what about possible effects on U.S. soybean farmers and even Ohio soybean farmers, more specifically? Tune in to our next FAQ to find out.

Will Sjoberg is a partner and focuses his practice on international trade. He can be reached at 202.778.3006 or wsjoberg@porterwright.com.

Consolidation may continue in grain markets

DEVAN FLAHIVE

Grain farmers' profitability can be crudely measured by the spread between input costs to grow crops and prices that commodity purchasers pay for crops. Markets for crop production inputs—including seeds, fertilizer and pesticides—have recently been shaped by mergers between agricultural biotechnology titans, including Dow-DuPont and ChemChina-Syngenta.

Now, another significant merger, this time affecting the second half of grain farmers' profitability equation, may be on the horizon. Reports indicate that grain trader and processor Archer Daniels Midland Co. (ADM) has made overtures relating to a takeover of competitor Bunge Ltd. ADM and Bunge are both powerful players in grain trade; according to the Wall Street Journal, ADM's valuation as of Jan. 19, 2018, was about $22.6 billion, while Bunge's market value was about $9.8 billion. Due to the transaction's potential size, an ADM-Bunge merger would likely be reviewed by antitrust regulators to determine the tie-

up's competitive effects in grain origination and oilseeds processing markets.

Merely because the combination may possess market power in a given area does not mean the entire transaction will be doomed. Often, parties will agree with the antitrust enforcement agencies to restructure a deal in order to satisfy the regulators' concerns. To illustrate, U.S. antitrust enforcers addressed concerns relating to the Dow-DuPont merger in a Final Judgment, entered Oct. 19, 2017, that required partial divestitures of DuPont's herbicides and insecticides businesses, as well as Dow's acid copolymers and ionomers business. Similarly, the Federal Trade Commission (FTC) determined that the ChemChina-Syngenta merger, as initially proposed, would harm competition in the U.S. markets for three pesticides. ChemChina's subsidiary supplied the generic alternative that predominantly competed with Syngenta's branded version of these three products. Thus, the FTC required divestitures of rights and assets of ChemChina's subsidiary to these products in order for the parties to complete the merger.

In light of market concentration in grain trading and processing, U.S. antitrust authorities will likely scrutinize a proposed ADM-Bunge merger to evaluate both synergies and economic impacts, such as the resulting firm's pricing power. The U.S. Department of Justice (DOJ) has in the past investigated mergers between grain traders. In 2000, the DOJ filed a civil action relating to the proposed merger between grain traders Cargill, Inc. and Continental Grain Company, alleging that Cargill's acquisition of Continental would substantially lessen competition for grain purchasing services in nine

different markets. The DOJ concluded that in those nine markets, Cargill would gain the power to artificially depress prices paid to crop farmers for grain and oilseeds. As a remedy, the DOJ, Cargill and Continental agreed to divestitures and various throughput agreements mandating competitors' access to grain distribution and storage infrastructure.

An ADM-Bunge merger would certainly be significant for farmers, biotechnology companies and other firms involved in the agricultural commodity supply chain.

Devan Flahive is an associate licensed only in West Virginia and concentrates her practice in oil and gas, antitrust and litigation. She can be reached at dflahive@porterwright.com or 614.227.1989.